

# ARTICLES

*Herpetological Review*, 2019, 50(3), 445–449.  
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## The Advertisement Call of *Ansonia latidisca*, the Bornean Rainbow Toad

*Ansonia latidisca*, the Bornean Rainbow Toad (Fig. 1), was, until 2011, known from three individuals from two locations in northwestern Borneo, namely, Gunung Damus in western Kalimantan, Indonesia, and Gunung Penrissen in western Sarawak, Malaysia, with the only published work being the description by Inger (1966), who classified it as a montane species. From the year of its first collection (1924), this species was not sighted until June 2011, when an expedition to the higher elevations (>1000 m elev.) of Gunung Penrissen rediscovered the species from tree trunks (ca. 2 m above ground) near forest trails (Pui et al. 2011). The species is currently listed as endangered in the IUCN Red List of Threatened Species, as the extent of its occurrence is less than 5,000 km<sup>2</sup>, its area of occupancy is less than 500 km<sup>2</sup>, all individuals are known from fewer than five locations, and there is continuing decline in the extent and quality of its habitat (Inger et al. 2018).

This communication presents information on the advertisement call of *A. latidisca*. Specifically, we noted note duration, note gap, repetition rate, dominant frequency, and fundamental frequency of call samples (see Cocroft and Ryan 1995).

### MATERIALS AND METHODS

Field observations were made at Gunung Penrissen, in western Sarawak, the range forming the natural boundary between Malaysia's Sarawak State and Indonesia's Kalimantan Barat Province. The forest type at the higher elevation of Gunung Penrissen (800–1300 m asl; 01.12°N, 110.21°E; WGS 84) is predominantly primary highland mixed dipterocarp forest, with jungle trails that permit access to the summit. Old growth trees are sparsely distributed along the trails, and there are abundant understory plants, including tree seedlings, wild ginger, aroids, rattans, climbers, ferns, and mosses. Due to high humidity levels, tree trunks are partially festooned with mosses and lichens.

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Field work was conducted from January to December 2012, over a total of 42 nights. Visual encounter surveys (Heyer et al. 1994), were conducted from 1800–2400 h. Additional surveys carried out in a wider range of habitats at different altitudes (particularly 800–1300 m, which is the known elevation range for the species) were unproductive in terms of encounters of *A. latidisca*.

Only three calling males were encountered whose complete calls could be recorded and the callers visually located. Calls were recorded using the bioacoustic techniques of Dorcas et al. (2009). Briefly, observers located calling males from transects. When a sighting was made, the recording system was set up between 1–1.5 m from the individual. The recorder was kept on until the animal ceased calling. Ambient temperature was taken at the time of recording. Recordings were made with a Marantz™ PMD670 portable solid-state digital recorder, coupled to a Sennheiser™ ME66 shotgun microphone attached to a Sennheiser™ K6P power module. The unit 66 has a super-cardioid/lobar pick-up pattern, with a frequency response in the 40–20,000 Hz ( $\pm 2.5$  dB) range. The solid state recorder was set to save mono-channel audio using the PCM (Pulse Code Modulation) algorithm at the unit's maximum sample rate of 48 kHz, in the “.wav” file format. We selected the PCM algorithm for its uncompressed signal representation, avoiding distortions due to a lossy, and applied non-linear compression algorithms to the data by various MPEG algorithms. We specified the highest



FIG. 1. An adult *Ansonia latidisca*.